

REMARKS

In view of the following remarks, Applicant requests favorable reconsideration of the above-identified application.

Claims 1-8 and 10-12 remain pending in this application, with Claims 1, 4, 7, 10, and 12, being independent. Claims 1-6 are allowed. By this Amendment, Applicant has amended independent Claims 7, 10, and 12.

Claims 10-12 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,420,717 (Tabata). Claims 7, 8, and 12 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,042,951 (Gold, et al.). Applicant traverses these rejections.

As recited in independent Claim 10, Applicant's invention is directed to an interferometer including a light source, polarization orientation changing means, analyzing means, and image pickup means. The light source emits linearly polarized light. The polarization orientation changing means changes a polarization orientation of the polarized light incident on object. The analyzing means switches the polarization orientation so as to allow to pass only the same polarized component as the polarized light incident on the object to be measured. The image pickup means detects the polarized light after passing through the object as an interference signal.

Applicant understands Tabata to describe an interference microscope that allows for setting and adjustment of the contrast. As shown in Figures 3 and 5, Tabata discloses a light source 17, a variable polarization element 18, and a CCD 9 for obtaining an interference image. The variable polarization element 18 varies the polarization state of

the light emitted from the light source 17, to adjust the contrast of the interference image captured by the CCD 9. Tabata, however, images the light with the polarization state exiting the light source system 16. Applicant does not understand Tabata to describe a mechanism for switching a polarization orientation to control the light imaged by the CCD 9.

Accordingly, Applicant submits that Tabata fails to describe or suggest at least the features of analyzing means for switching a polarization orientation so as to allow to pass only the same polarized component as the polarized light incident on the object to be measured, as recited in independent Claim 10.

As recited in independent Claim 7, Applicant's invention is also directed to a measuring method including the steps of arranging an object to be measured and measuring a wavefront of first linearly polarized light from the object. The method also includes a step of measuring a wavefront of second linearly polarized light from the object, wherein the first and the second linearly polarized lights are made incident on the object in mutually different polarization orientations. In addition, the method includes a step of calculating at least one of a retardation and an average wavefront of the object on the basis of the measured interference pattern of the wavefront of the first and the second linearly polarized lights.

Independent Claim 12 is also directed to a measuring method. That method includes steps of arranging an object to be measured and making linearly polarized light incident on the object. The method also includes a step of passing the light from the object to an analyzer so as to allow to pass only the same polarized component as the polarized

light incident on the object. Further, the method includes measuring the interference pattern of the wavefront of the light passed through the analyzer, and calculating at least one of a retardation and an average wavefront from the object based on the measured interference pattern of the wavefront.

Thus, independent Claims 7 and 12 each recite calculating at least one of a retardation and an average wavefront from an object on the basis of a measured interference pattern of a wavefront.

Applicant understands Gold, et al. to describe an ellipsometer designed to make measurements at multiple angles of incidence. As shown in Figure 7, Gold, et al. discloses a detector 50 that detects light reflected from a sample 40. The lens 46 has a high numerical aperture, so rays of the focused beam have multiple angles of incidence. The ellipsometer provides polarizing filter 390 to select the polarization of light focused on the sample 40, and polarization filter 330 to select the polarization of light sampled by the detector 50. The detector 50 measures the intensity of the beam as a function of angle of incidence, and the processor 52 calculate parameters of sample 40 based on the measured light intensity and the azimuthal position of the rotating polarizing filter. Applicant, however, does not understand Gold, et al. to teach or suggest the measurement of an interference pattern of a wavefront using the described system. Thus, Applicant does not believe that Gold, et al. suggests calculating at least one of a retardation and an average wavefront of an object on the basis of the measured interference pattern of the wavefront of the first and second linearly polarized lights. Instead, Gold, et al. merely discusses the calculation of sample parameters (column 13, lines 15 and 16).

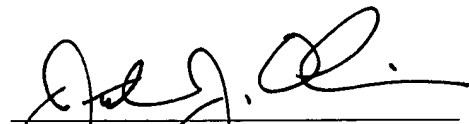
Accordingly, Applicant submits that Gold, et al. fails to disclose or suggest at least the features of calculating at least one of a retardation and an average wavefront from an object on the basis of a measured interference pattern of a wavefront, as generally recited in independent Claims 7 and 12.

The remaining claims in the present application not already allowed are dependent claims which depend from the above-discussed independent claims, and thus are patentable over the applied documents for reasons noted above with respect to those independent claims. In addition, each recites features of the invention still further distinguishing it from the applied documents. Applicant requests favorable and independent consideration thereof.

For the foregoing reasons, Applicant requests withdrawal of the rejections under 35 U.S.C. §§ 102 and 103, allowance of this case.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,


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